# HAMPTON BAYS Corridor Strategic Plan GEIS and Cumulative Impact of Build-Out Study

Part V: RESOURCES & ATTACHMENTS

# 6. Definitions of Ecological Communities Found in Hampton Bays

# Terrestrial System — Forested Uplands

## • Pitch Pine-Oak Forest

Edinger et al. (2002) describes pitch pine-oak forests as follows: There are at least two potential regional variants of pitch pine-oak forests. These include the typical coastal variant on Long Island and the inland variant of upstate New York. The coastal variant pine-oak forest which is applicable to the Hamlet of Hampton Bays, consists of native mixed woodlands that are commonly found on well-drained, sandy soils of glacial outwash plains or moraines. The dominant trees are pitch pine (Pinus rigida) mixed with one or more of the following oaks: scarlet oak (Quercus coccinea), white oak (Q. alba), red oak (Q. rubra), or black oak (Q. velutina). The relative proportions of pines and oaks are quite variable within this community type. At one extreme are stands in which the pines are widely spaced amidst the oaks, in which case the pines are often emergent above the canopy of oak trees. At the other extreme are stands in which the pines form a nearly pure stand with only a few widely spaced oak trees. The shrublayer is well-developed with scattered clumps of scrub oak (Quercus ilicifolia) and a nearly continuous cover of low heath shrubs such as blueberries (Vaccinium pallidum, V. angustifolium) and black huckleberry (Gaylussacia baccata). The herbaceous layer is relatively sparse. Characteristic species are bracken fern (Pteridium aquilinum), wintergreen (Gaultheria procumbens), and Pennsylvania sedge (Carex pensylvanica).

Characteristic birds include rufous-sided towhee (Pipilo erythrophthalmus), common yellowthroat (Geothlypis trichas), field sparrow (Spizella pusilla), prairie warbler (Dendroica discolor), pine warbler (Dendroica pinus), blue jay (Cyanocitta cristata), and whip-poorwill (Caprimulgus vociferus).

The global and state rarity ranking for this community type is G4G5 S4 "apparently secure globally" or "demonstrably secure globally, and "apparently secure in New York State".

### • Successional Southern Hardwoods

Edinger et al. (2002) provide a general description of successional southern hardwoods as follows: A hardwood or mixed forest that occurs on sites that have been cleared or otherwise disturbed. Characteristic trees and shrubs include any of the following: American elm (Ulmus americana), slippery elm (U. rubra), white ash (Fraxinus americana), red maple (Acer rubrum), box elder (Acer negundo), silver maple (A. saccharinum), sassafras (Sassafras albidum), gray birch (Betula populifolia), hawthorns (Crataegus spp.), eastern red cedar (Juniperus virginiana), and choke-cherry (Prunus virginiana). Certain introduced species are commonly found in successional forests, including black locust (Robinia pseudo-acacia), tree of heaven (Ailanthus altissima), and buckthorn (Rhamnus cathartica). Any of these may be dominant or codominant in a successional southern hardwood forest. Southern indicators include American elm, white ash, red maple, box elder, choke-cherry, and sassafras. This is a broadly defined community and several seral and regional variants are known. A characteristic bird is chestnut-sided warbler (Dendroica pensylvanica).

The rarity ranking for Successional southern hardwood forests is G5 S5. G5 is considered "demonstrably secure globally, though it may be quite rare in parts of its range, especially at the periphery." S5 is described as "demonstrably secure in New York State".

# Terrestrial System — Open Uplands

## Successional Old Field

Successional old fields have been identified in a small area located north of Montauk Highway and west of Squiretown Road behind the Main Street development; south of the Long Island Railroad and east of the Cora Court cul-de-sac; and at the northeast corner of the intersection of Montauk Highway and Bittersweet Road east of the Capital One Bank. This last mentioned site is on the Town's CPF priority acquisition list and has also been cited by community members as a preservation target in order to maintain the stretch of natural, wooded area it provides along Montauk Highway. The property contains the successional old field community in the center, where it had once been cleared; it's perimeter is comprised of the pitch pine-oak community.

Edinger et al. (2002) gives the following general description of successional old fields: A meadow dominated by forbs and grasses that occurs on sites that have been cleared and plowed (for farming or development), and then abandoned.

Characteristic herbs include goldenrods (Solidago altissima, S. nemoralis, S. rugosa, S. juncea, S. canadensis, and Euthamia graminifolia), bluegrasses (Poa pratensis, P. compressa), timothy (Phleum pratense), quackgrass (Agropyron repens), smooth brome (Bromus inermis), sweet vernal grass (Anthoxanthum odoratum), orchard grass (Dactylis glomerata), common chickweed (Cerastium arvense), common evening primrose (Oenothera biennis), oldfield cinquefoil (Potentilla simplex), calico aster (Aster lateriflorus), New England aster (Aster novae-angliae), wild strawberry (Fragaria virginiana), Queen-Anne's lace (Daucus corota), ragweed (Ambrosia artemisiifolia), hawkweeds (Hieracium spp.), dandelion (Taraxacum officinale), and ox-tongue (Picris hieracioides).

Shrubs may be present, but collectively they have less than 50 percent cover in the community. Characteristic shrubs include gray dogwood (Cornus foemina ssp. racemosa), silky dogwood (Cornus amomum), arrowwood (Viburnum recognitum), raspberries (Rubus spp.), sumac (Rhus typhina, R. glabra), and eastern red cedar (Juniperus virginiana).

A characteristic bird is the field sparrow (Spizella pusilla). This is a relatively short-lived community that succeeds to a shrubland, woodland, or forest community.

The rarity ranking for successional old fields is G4 S4. G4 describes communities that are "apparently secure globally, though it may be quite rare in parts of its range, especially at the periphery." S4 is defined as "apparently secure in New York State".

#### Maritime Beach

Maritime beach occurs along a portion of the Shinnecock Bay shoreline adjacent to and south of Montauk Highway opposite South Valley Road within the corridor plan study area.

Edinger et al. (2002) offers the following general description of maritime beaches: Maritime beaches are a community with extremely sparse vegetation that occurs on unstable sand, gravel, or cobble ocean shores above mean high tide, where the shore is modified by storm waves and wind erosion.

Characteristic species include beachgrass (Ammophila breviligulata), searocket (Cakile edentula ssp. edentula), seaside atriplex (Atriplex patula), seabeach atriplex (A. arenaria), seabeach sandwort (Honkenya peploides),

salsola (Salsola kali), seaside spurge (Chamaesyce polygonifolia), and seabeach knotweed (Polygonum glaucum).

This community type sometimes provides important nesting ground for birds such as piping plover (Charadrius melodus), least tern (Sterna antillarum), common tern (S. hirundo), and roseate tern (S. dougallii). However, there is no documentation of the occurrence of these species at the Shinnecock maritime beach.

The rarity ranking for maritime beaches is G5 S5. G5 is considered "demonstrably secure globally, though it may be quite rare in parts of its range, especially at the periphery." S5 is described as "demonstrably secure in New York State".

# Estuarine System — Estuarine Subtidal

### • Tidal Creek

Edinger et al. (2002) provide a general description of tidal creeks as follows: The aquatic community of a shallow, continuously semi-diurnally tidally flooded creek with submerged areas averaging less than 2 m (6 ft) deep at low tide. The water is typically brackish to saline, but the community can range from freshwater (0 to 0.5 ppt salinity), to brackish (0.5 to 18 ppt), to saline (18 to 30 ppt or greater). Varying depth zones and flow microhabitats often result in a diverse array of ecological associations. Water levels fluctuate with the tides and two community depth zones are typically encountered: I) the subtidal, permanently flooded, portion of the creek and 2) the intertidal portion including banks and midchannel bars or terraces exposed at low tide. Typical flow microhabitats in a fully-developed creek include abundant slow-flowing pools connected by runs with localized turbulent, fast flowing riffles. Typical examples drain the waters of semi-diurnally tidally flooded marshes and most of these marshes are coastal salt marshes of the back barrier or finger marsh type [which is most characteristic of Tiana Bay]. Most tidal creeks flow in a very sinuous (i.e., meandering) pattern through a salt marsh. Although the vertical banks of the creek are regularly eroded and slump into the creek bottom, the position of the creek bed in the marsh is fairly stable and oxbows are rare. The sinuous meanders of the creek are not formed by recent erosion of the marsh, rather they are thought to be relicts of the drainage channels that were active in the tidal flats when the salt marsh grasses first became established.

Widgeon-grass (*Ruppia maritima*) is abundant in brackish to saline tidal creeks. Common epiphytic plants include the marine red algae tubed weed (*Polysiphonia stricta*) and banded weed (*Ceramium strictum*). Other characteristic plants are the marine red algae tubed weed (*Polysiphonia*)

denudata), graceful red weed (Gracilaria tikvahiae), and Spyridia filamentosa and several cyanobacteria including Hydrocoleum lyngbaceum, Anabaena torulosa, and Agmenellum quadruplicatum.

Fauna in tidal creeks are diverse. Several fishes that are resident in brackish to saline tidal creeks at low tide also use the low salt marsh when it is flooded by high tide. Characteristic fishes that have this distribution pattern include Atlantic silverside (Menidia menidia), mummichog (Fundulus heteroclitus), striped killifish (Fundulus majalis), sheepshead minnow (Cyprinodon variegatus), fourspine stickleback (Apeltes quadracus), threespine stickleback (Gasterosteus aculeatus), and American eel (Anguilla rostrata). Brackish to saline tidal creeks are also utilized as nursery areas for several important marine fishes, including winter flounder (Pseudopleuronectes americanus), black sea bass (Centropristis striata), bluefish (Pomatomus saltatrix), and striped bass (Morone saxatilis). Great blue heron (Ardea herodias) and egrets commonly feed on the fish. Comb jellies (Beroe spp., Mnemiopsis spp.) are common plankton species. Common benthic epifauna include eastern mud snail (Nassarius obsoletus), daggerblade grass shrimp (Palaemonetes pugio), longwrist hermit crab (Pagurus longicarpus), and common Atlantic slippershell (Crepidula crepidula). Common benthic infauna include northern quahog (Mercenaria mercenaria), softshell clam (Mya arenaria), razor clam (Ensis directus), and bamboo worms (Polychaeta). Other characteristic marine invertebrates include blue crab (Callinectes sapidus), hairy sea cucumber (Sclerodactyla briareus), Atlantic horseshoe crab (Limulus polyphemus), acorn worm (Hemichordata) and terrebelid worm (Amphitrite spp.).

Tidal creek pools have silty substrate with abundant beds of widgeon grass and tubed weed and the characteristic fauna of hairy sea cucumber, American eel, grass shrimp, and eastern mud snail. Runs have sandy to gravelly substrate supporting the marine algae species tubed weed, graceful red weed, and green fleece (Codium fragile), a common exotic marine green algae, benthic marine fish such as naked goby (Gobiosoma bosci) and northern pipefish (Syngnathus fuscus), and many marine mollusks. Riffles have gravelly to cobbly bottoms with macroalgae beds of hollow green weed (Enteromorpha spp.), benthic marine fish such as naked goby and marine mollusks such as common Atlantic slippershell. Intertidal peaty banks of creeks in salt marshes, especially in pools and runs, are characterized by abundant ribbed mussel (Modiolus demissus), mummichog, and killifish.

Tidal creeks have a rarity ranking of G4 S3S4. G4 is describes communities that are "apparently secure globally, though it may be quite rare in parts of its range, especially at the periphery." S3 is described as

"typically 21 to 100 occurrences, limited acreage, or miles of stream in New York State" and S4 is defined as "apparently secure in New York State".

# **Estuarine Intertidal**

#### Brackish Tidal Marsh

Edinger et al. (2002) provide the following general description of brackish tidal marshes: A marsh community that occurs where water salinity ranges from 0.5 to 18.0 ppt, and water is less than 2 m (6 ft) deep at high tide. This community consists of a mixture of salt marsh and freshwater tidal marsh species, with no species attaining dominance over extensive areas (although some species are locally abundant in patches). The vegetation in a brackish tidal marsh is dense and dominated by tall graminoids.

Characteristic plants are narrowleaf cattail (Typha angustifolia), rose-mallow (Hibiscus moscheutos), wild rice (Zizania aquatica), pickerel-weed (Pontederia cordata), arrowleaf (Peltandra virginica), water smartweed (Polygonum punctatum), reedgrass (Phragmites australis), marsh fern (Thelypteris palustris), bulrushes (Scirpus americanus, S. fluviatilis, S. novae-angliae, S. robustus, S. tabernaemontani), water-hemp (Amaranthus cannabinus), dwarf

spikerush (Eleocharis parvula), arrowhead (Sagittaria latifolia), lilaeopsis (Lilaeopsis chinensis), hedge bindweed (Calystegia sepium), seaside goldenrod (Solidago sempervirens), yellow iris (Iris pseudacorus), and saltmarsh fleabane (Pluchea odorata). Purple loosestrife (Lythrum salicaria) is a common invasive plant in brackish marshes.

Characteristic birds include red-winged blackbird (Agelaius phoeniceus), swamp sparrow (Melospiza georgiana), marsh wren (Cistothorus palustris), yellow warbler (Dendroica petechia), common yellowthroat (Geothlypis trichas), song sparrow (Melospiza melodia), Virginia rail (Rallus limicola), American goldfinch (Carduelis tristis), and eastern kingbird (Tyrannus tyrannus).

Brackish marshes are best developed on large river systems characterized by gentle slope gradients coupled with tidal influence over considerable distances. The downstream limits of the community begin where cordgrass (Spartina alterniflora) no longer dominates tidal creek or river banks, and the upstream limits extend to where the hollow green weeds (Enteromorpha intestinalis) can no longer be found.

Brackish tidal marshes can be distinguished from freshwater tidal marshes by the lack of species restricted to freshwater, such as spatterdock (Nuphar advena), sweetflag (Acorus americanus), and blue flag (Iris versicolor), and a decrease in cover of sedges (Carex spp. and Cyperus spp.). Brackish marshes that are dominated by reedgrass (Phragmites australis) as a result of anthropogenic disturbance should be classified as a cultural community, such as estuarine impoundment marsh or estuarine dredge spoil shore. Examples where the tidal influence is greatly diminished may be classified as reedgrass/purple loosestrife marsh, a palustrine cultural community.

Brackish tidal marshes may grade into "supratidal marshes" in areas above mean high water where salt can concentrate by evaporation.

The rarity ranking for brackish tidal marshes is G4 S3S4. G4 describes communities that are "apparently secure globally, though it may be quite rare in parts of its range, especially at the periphery." S3 is described as "typically 21 to 100 occurrences, limited acreage, or miles of stream in New York State" and S4 is defined as "apparently secure in New York State".

# Palustrine System — Forested Mineral Soil Wetlands

# • Red Maple Hardwood Swamp

Edinger et al. (2002) provide a general description of red maple hardwood swamps as follows: A hardwood swamp that occurs in poorly drained depressions, usually on inorganic soils. This is a broadly defined community with many regional and edaphic [soil] variants. In any one stand red maple (Acer rubrum) is either the only canopy dominant, or it is codominant with one or more hardwoods including ashes (Fraxinus pennsylvanica, F. nigra, and F. americana), elms (Ulmus americana and U. rubra), yellow birch (Betula alleghaniensis), and swamp white oak (Quercus bicolor). Other trees with low percent cover include butternut (Juglans cinerea), bitternut hickory (Carya cordiformis), black gum (Nyssa sylvatica), ironwood (Carpinus carolinianus), and white pine (Pinus strobus).

The shrublayer is usually well-developed and may be quite dense. Characteristic shrubs are winterberry (Ilex verticillata), spicebush (Lindera benzoin), alders (Alnus incana ssp. rugosa and A. serrulata), viburnums (Viburnum recognitum, and V. cassinoides), highbush blueberry (Vaccinium corymbosum), common elderberry (Sambucus canadensis), and various shrubby dogwoods (Cornus sericea, C. racemosa, and C. amomum). Swamp azalea (Rhododendron viscosum) is

more common in southern examples, and poison sumac (Toxicodendron vernix) and black ash are more common in richer (higher pH) examples.

The herbaceous layer may be quite diverse and is often dominated by ferns, including sensitive fern (Onoclea sensibilis), cinnamon fern (Osmunda cinnamomea), royal fern (O. regalis), and marsh fern (Thelypteris palustris), with much lesser amounts of crested wood fern (Dryopteris cristata), and spinulose wood fern (Dryopteris carthusiana). Characteristic herbs include skunk cabbage (Symplocarpus foetidus), white hellebore (Veratrum viride), sedges (Carex stricta, C. lacustris, and C. intumescens), jewelweed (Impatiens capensis), false nettle (Boehmeria cylindrica), arrow arum (Peltandra virginica), tall meadow rue (Thalictrum pubescens), and marsh marigold (Caltha palustris). Open patches within the swamp may contain other herbs characteristic of shallow emergent marsh.

These swamps provide breeding habitat for many wetland dependent species, such as spring peeper (Pseudacris crucifer), American toad (Bufo americanus), wood frog (Rana sylvatica), and spotted salamander (Ambystoma maculatum) (Golet et al. 1993).

The rarity ranking for red maple hardwood swamps is G5 S4S5. G5 is considered "demonstrably secure globally, though it may be quite rare in parts of its range, especially at the periphery." S4 is considered "apparently secure in New York State" and S5 is described as "demonstrably secure in New York State".

## **Palustrine Cultural**

## Reedgrass Marsh

Edinger et al. (2002) provides the following brief and general description of reedgrass marshes: A marsh that has been disturbed by draining, filling, road salts, etc. in which reedgrass (Phragmites australis) or purple loosestrife (Lythrum salicaria) has become dominant.

This community is common along highways and railroads.

The rarity ranking for reedgrass marshes is G5 S5. G5 is considered "demonstrably secure globally, though it may be quite rare in parts of its range, especially at the periphery." S5 is described as "demonstrably secure in New York State".

# **Open Mineral Soil Wetlands**

# • Shrub Swamp - Pine Barrens Shrub Swamp

Edinger et al. (2002) offers the following general description of shrub swamps and pine barrens shrub swamps as follows: An inland wetland dominated by tall shrubs that occurs along the shore of a lake or river, in a wet depression or valley not associated with lakes, or as a transition zone between a marsh, fen, or bog and a swamp or upland community. The substrate is usually mineral soil or muck. This is a very broadly defined type that includes several distinct communities and many intermediates. Shrub swamps are very common and quite variable. They may be codominated by a mixture of species, or have a single dominant shrub species.

A swamp dominated by red osier dogwood (Cornus sericea), silky dogwood (C. amomum), and willows (Salix spp.) may be called a shrub carr. Along the shores of some lakes and ponds there is a distinct zone dominated by water-willows (Decodon verticillatus) and/or buttonbush (Cephalanthus occidentalis) which can sometimes fill a shallow basin.

Characteristic shrubs that are common in these and other types of shrub swamps include meadow-sweet (Spiraea alba var. latifolia), steeple-bush (Spiraea tomentosa), gray dogwood (Cornus foemina ssp. racemosa), swamp azalea (Rhododendron viscosum), highbush blueberry (Vaccinium corymbosum), maleberry (Lyonia ligustrina), smooth alder (Alnus serrulata), spicebush (Lindera benzoin), willows (Salix bebbiana, S. discolor, S. lucida, S. petiolaris), wild raisin (Viburnum cassinoides), and arrowwood (Viburnum recognitum). More documentation and research is needed to distinguish the different types of shrub swamps in New York.

Birds that may be found in shrub swamps include common species such as common yellowthroat (Geothlypis trichas); and rare species such as American bittern (Botaurus lentiginosus), alder flycatcher (Empidonax alnorum), willow flycatcher (E. trallii), and Lincoln's sparrow (Passerella lincolnii) (Levine 1998).

The rarity ranking for shrub swamps is G5 S5. G5 is considered "demonstrably secure globally, though it may be quite rare in parts of its range, especially at the periphery." S5 is described as "demonstrably secure in New York State."

### Pine Barrens Shrub Swamp

A shrub-dominated wetland that occurs in shallow depressions in the coastal plain, often as a linear transition zone between a coastal plain pond shore and either pitch pine-scrub oak barrens or pitch pine-oak forest.

Characteristic tall shrubs include highbush blueberry (Vaccinium corymbosum), inkberry (llex glabra), male-berry (Lyonia ligustrina), fetterbush (Leucothoe racemosa), sweet pepper-bush (Clethra alnifolia). Other tall shrubs include staggerbush (Lyonia mariana), red chokeberry (Aronia arbutifolia), bayberry (Myrica pensylvanica), swamp azalea

(Rhododendron viscosum). Characteristic short shrubs include highbush blueberry, leatherleaf (Chamaedaphne calyculata), dwarf huckleberry (Gaylussacia dumosa), sheep laurel (Kalmia angustifolia). Other short shrubs include sweet pepperbush, large cranberry (Vaccinium macrocarpon), and dangleberry (Gaylussacia frondosa).

The herb layer is sparse and characteristic herbs include Virginia chain fern (Woodwardia virginica), cinnamon fern (Osmunda cinnamomea), marsh fern (Thelypteris palustris) and tussock sedge (Carex stricta). Sphagnum is a characteristic moss in the groundlayer.

Most pine barrens shrub swamps occur as small isolated segments, and large examples are rare. This community is linear in shape, often very thin (about 5-10 m) and typically less than 26 acres in size. The major ecological factors influencing this community include hydrology and fire. Pine barrens shrub swamps are best developed along the upper edges of coastal plain ponds that have variable hydrology, and are embedded in a fire prone forest, such as a pitch pine-oak forest.

Pine barrens shrub swamp is essentially an edge community positioned between more persistent wetlands and a fire-prone upland. Consequently vegetation and soils reflect the constant tension between the contraction and expansion of adjacent wetlands and additional disturbances such as fire and frost. Peat develops only intermittently to a thin 5-10 centimeters layer, and vegetation consists of both wetland and upland species.

The rarity ranking for pine barrens shrub swamps is G5 S3. G5 is considered "demonstrably secure globally, though it may be quite rare in parts of its range, especially at the periphery." S3 is described as "typically 21 to 100 occurrences, limited acreage, or miles of stream in New York State"

#### Coastal Plain Ponds

Edinger et al. describe coastal plain ponds as follows: The aquatic community of the permanently flooded portion of a coastal plain pond with seasonally, and annually fluctuating water levels. These are shallow, groundwater-fed ponds that occur in kettle-holes or shallow depressions in the outwash plains south of the terminal moraines of Long Island, and New England. A series of coastal plain ponds are often hydrologically

connected, either by groundwater, or sometimes by surface flow in a small coastal plain stream. Water is typically acidic, darkly stained, and has low transparency. The substrate is typically sand to muck.

Aquatic vegetation may be abundant. Characteristic plants include watershield (Brasenia schreberi), white water-lily (Nymphaea odorata), bayonet-rush (Juncus militaris), spikerush (Eleocharis robbinsii), bladderworts (Utricularia purpurea, U. fibrosa), water milfoil (Myriophyllum humile), naiad (Najas flexilis), waterweed (Elodea spp.), pondweed (Potamogeton oakesianus), pipewort (Eriocaulon aquaticum), brownfruited rush (Juncus pelocarpus), golden-pert (Gratiola aurea), and a peat moss (Sphagnum macrophyllum).

Characteristic fishes include chain pickerel (Esox niger), banded sunfish (Enneacanthus obesus), and eastern mudminnow (Umbra pygmaea). Coastal plain ponds are breeding ponds for tiger salamander(Ambystoma tigrinum). Other characteristic fauna may include painted turtle (Chrysemys picta), wood duck (Aix sponsa), and muskrat (Ondatra zibethicus). More data on this community are needed.

The rarity ranking for coastal plain ponds is G3G4 S2. G3 is defined as "either rare and local throughout its range (21 to 100 occurrences), or found locally (even abundantly at some of its locations) in a restricted range (e.g., a physiographic region), or vulnerable to extinction throughout its range because of other factors." G4 describes communities that are "apparently secure globally, though it may be quite rare in parts of its range, especially at the periphery." S2 is described as "typically 6 to 20 occurrences, few remaining individuals, acres, or miles of stream, or factors demonstrably making it very vulnerable in New York State."